



**NOAA
FISHERIES**

Alaska Fisheries
Science Center

Joint Groundfish Plan Team meeting report

Grant Thompson and Steve Barbeaux (BSAI co-chairs)

Steve MacLean (BSAI coordinator)

Jim Ianelli and Chris Lunsford (GOA co-chairs)

Sara Cleaver (GOA coordinator)

November 30th, 2020

Joint Plan Team Meeting overview and agenda

Overview

- Date: November 16-20th
- Place: Online
- Participation: 24 Team members present (4 vacancies remain)
- Numerous AFSC and AKRO staff and members of the public

Agenda

- Grenadiers
- Economic SAFE report
- Risk tables
- Sablefish

The Grenadier Stock in Alaska

Cara Rodgveller and Kevin Siwicke
AFSC, Auke Bay Laboratories



The graceful
grenadier



Ecosystem Component

- In the BSAI and GOA FMPs
- No management – no ABC or OFL
- No targeted fishing
- SAFE not required
- Unofficial SAFE every 4 years

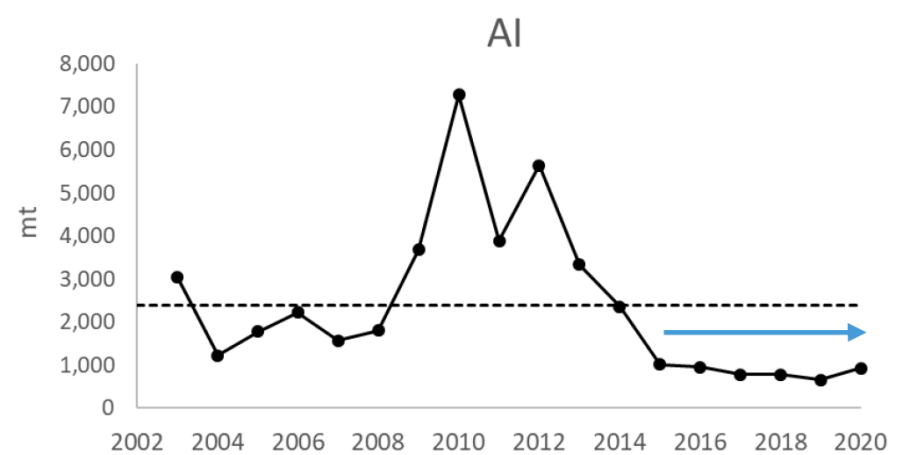
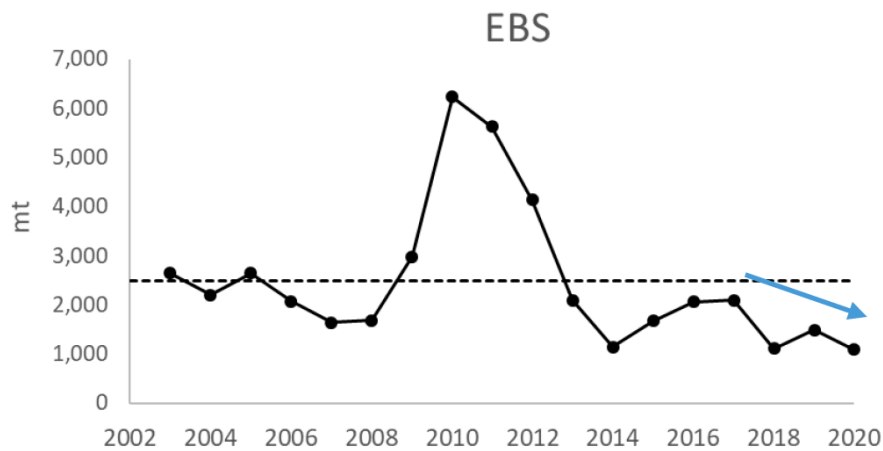
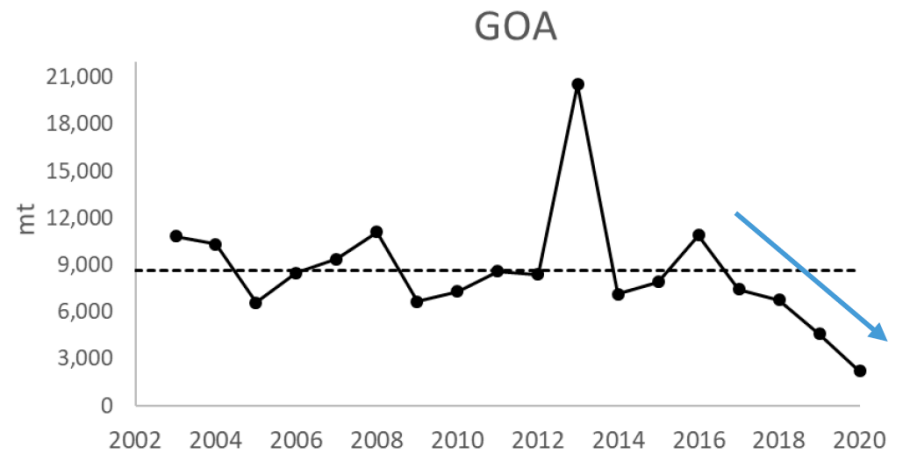
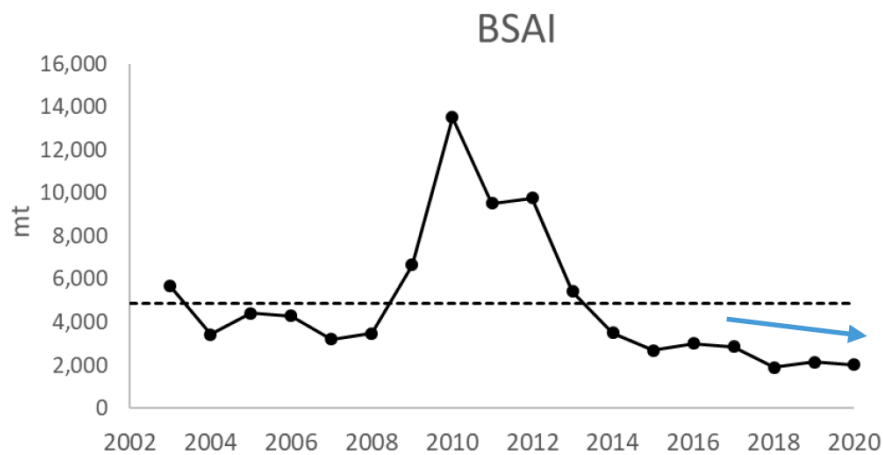


Retained on longline survey (once)

Down in BS, overall in the BSAI, and in the GOA

Target fisheries

- BS: Greenland turbot and P. halibut
- GOA: sablefish



Grenadier summary (example ABCs)

- Compared to the last SAFE, completed in 2016,
 - 12% decrease in the BSAI
 - 27% decrease in the GOA
- Catches well below unofficial ABL and OFL (again, not used for management)

Complex	Year	BSAI Biomass	BSAI ABC	BSAI Catch ¹	GOA Biomass	GOA ABC	GOA Catch ¹	Total Catch ¹
grenadiers	2019	1,197,110	70,031	2,142	507,888	29,711	4,601	6,743
	2020	1,197,110	70,031	2,016	507,888	29,711	2,213	4,229
	2021	1,055,348	61,738		369,618	21,623		
	2022	1,055,348	61,738		369,618	21,623		

ECONOMIC SAFE



Economic Status report contents

Executive Summary: 2019 highlights

- Report Card Metrics
- Plan Team Reports

Overview of the Economic Data Tables

- All Alaska summary Tables (1-9)
- BSAI data Tables (10-25)
- GOA data Tables (26-41)
- Halibut data Tables (H1-H10)

Contributions

AFSC's Econ/social sciences group to NPFMC

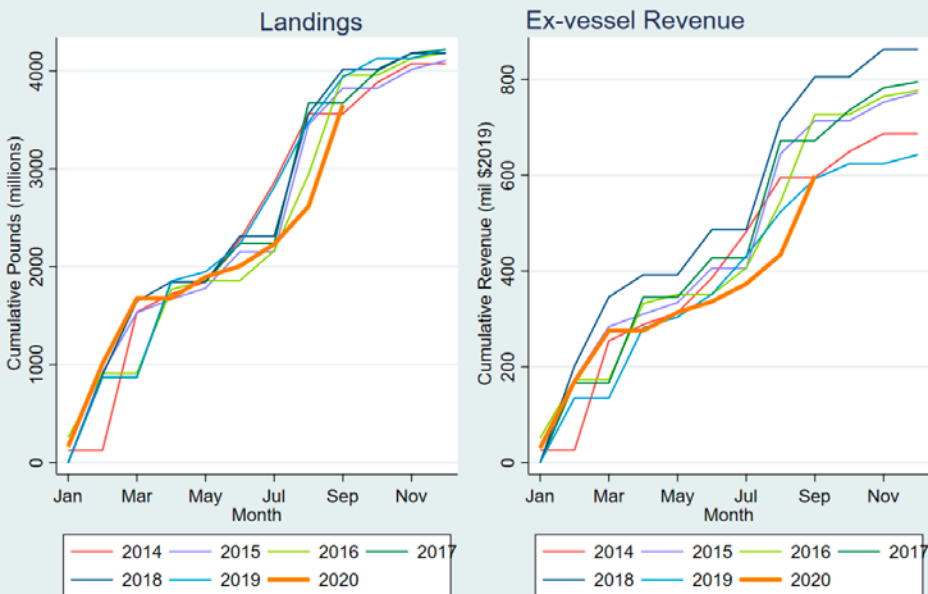
- 1) Econ SAFEs
- 2) Ecosystem Status Reports (ESR),
- 3) Economic Performance Report (EPR) / Ecosystem and Socioeconomic Profile (ESP),
- 4) Annual Community Engagement and Participation Overview (ACEPO),
- 5) Webtools, and
- 6) Other Sources (e.g., research, PTs, SSC input etc.)

In-season Ex-Vessel Harvest and Revenue

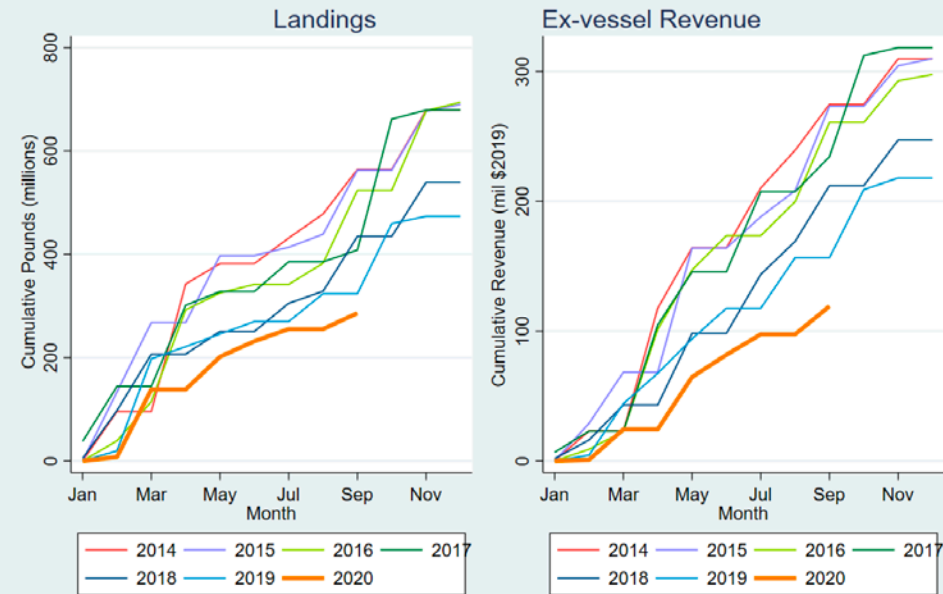
Estimates for 2020

- Estimates “nowcasts” of 2020 monthly ex-vessel revenues and landings for Alaska groundfish and halibut fisheries through Sept.
- BSAI YoY harvest volumes through Sept. fell by approximately 11% in 2020 compared with 2019 and ex-vessel revenues are expected to be down 4% from 2019.
- GOA YoY harvest volumes through Sept. fell 27% in 2020 and ex-vessel revenues are expected to be down 32% from last year.

BSAI Cumulative Landings and Revenue by Year



GOA Cumulative Landings and Revenue by Year



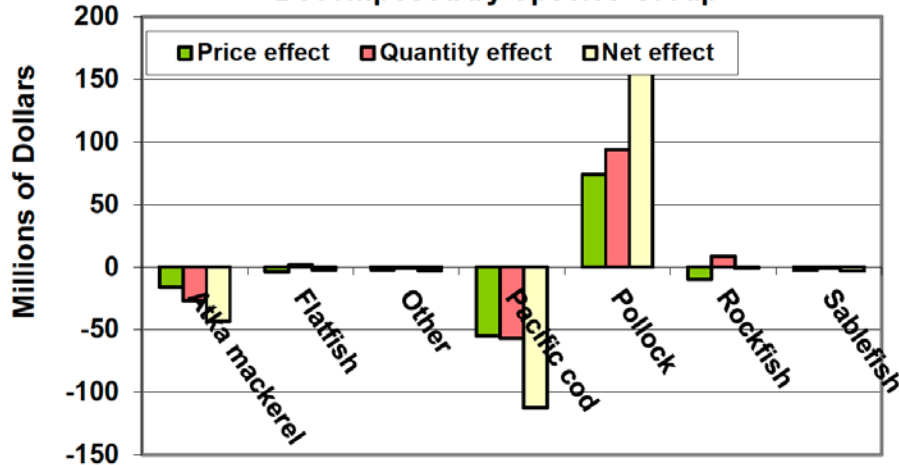
Revenue Decompositions 2018-2019

Bering Sea & Aleutian Islands

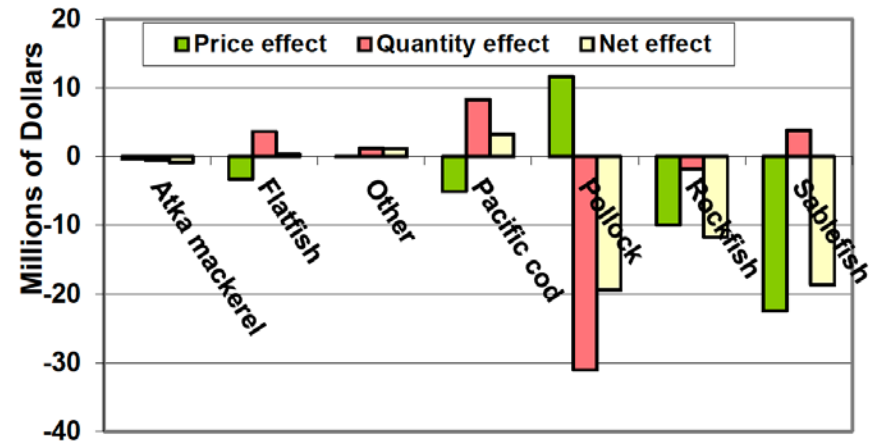
Gulf of Alaska

Species

**BSAI First-Wholesale Revenue Change in 2018-19
Decomposed by Species Group**

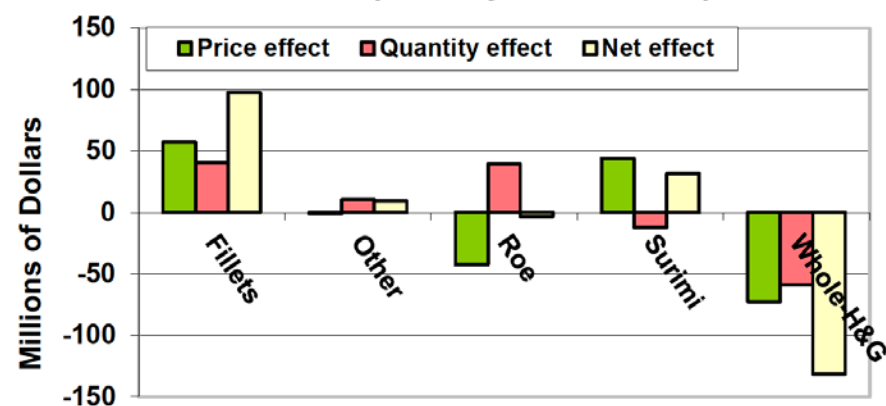


**GOA First-Wholesale Revenue Change in 2018-19
Decomposed by Species Group**

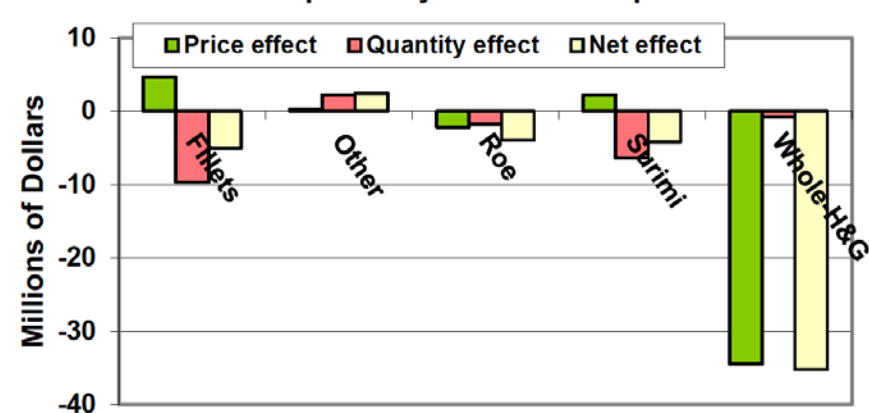


Product

**BSAI First-Wholesale Revenue Change in 2018-19
Decomposed by Product Group**



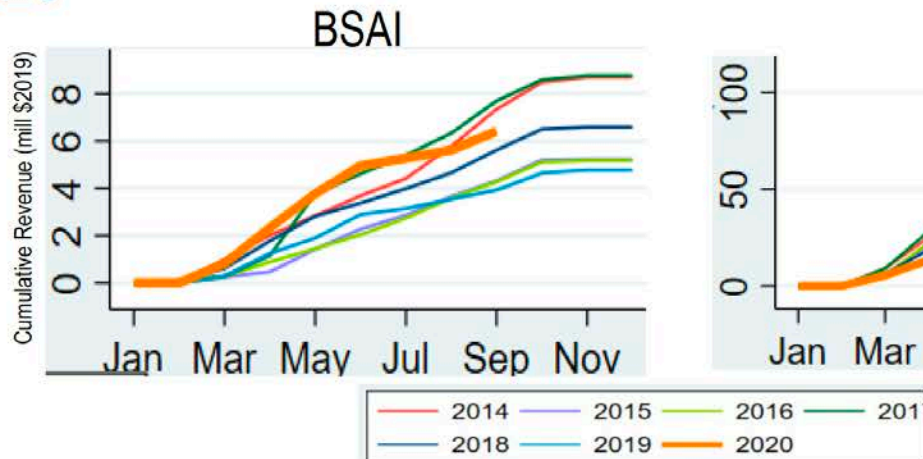
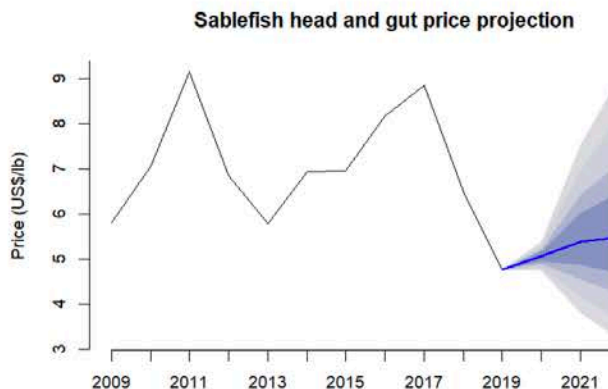
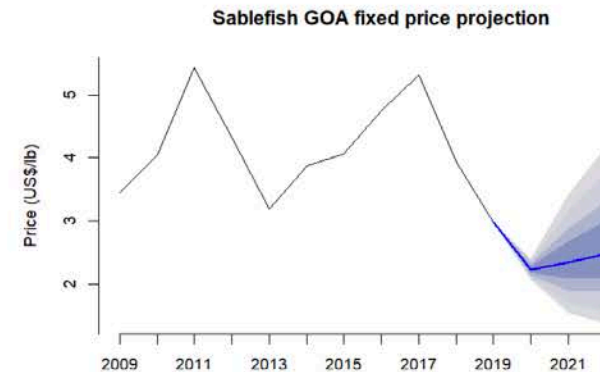
**GOA First-Wholesale Revenue Change in 2018-19
Decomposed by Product Group**



Sablefish

Economic SAFE

- Revenues down in 2019 with substantial decrease in the average price of sablefish.
- Decrease driven by decreases in size of average fish and price margin between fish sizes.
- Ex-vessel prices expected to decrease further in 2020.
- First-wholesale H&G prices are projected to stabilize in 2020



Economic SAFE chapter

Teams recommendation

- The Teams would like the SSC to clarify how the community information should be presented in a stock-specific manner in ESPs, or if it could better be placed in the broader context of the changes being experienced by communities.

Risk tables

- Teams compared 2019 and 2020 author recommended values
 - Differences in treatment of the levels among assessments
 - No changes to the author-recommended scores
- Refer to minutes and summary sections (in intros) for individual stock

Risk table (from 2019)

Stock	Assessment-related	Population Dynamics	Environment /Ecosystem	Fishery Performance	Overall	Proposed Reduction
Sablefish	2	3	2	3	3	0.57
EBS Pollock	1	2	2	2	2	0.43
GOA Pollock	2	1	1	1	2	0.10
EBS Pacific Cod	1	1	2	1	2	*
AI Pacific Cod	1	1	2	1	2	*
GOA Pacific Cod	2	2	2	1	2	*
BSAI Northern Rockfish	2	1	2	1	2	0
GOA POP	2	2	1	1	2	0
GOA Arrowtooth	1	1	2	1	2	0
BSAI Yellowfin Sole	1	1	1	1	1	0
BSAI Alaska Plaice	1	1	1	1	1	0
BSAI Atka Mackerel	1	1	1	1	1	0
GOA RE/BS	1	1	1	1	1	0
GOA Other Rockfish	1	1	1	1	1	0
GOA Shortraker	1	1	1	1	1	0
GOA Atka Mackerel	1	Unknown	1	1	1	0
GOA Octopus	1	1	1	1	1	0
GOA Skate	1	1	1	1	1	0

Risk table updated

Stock	Assessment related		Population Dynamics		Environment Ecosystem		Fishery Performance		Proposed Reduction	
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Sablefish	2	3	3	3	2	2	3	3	57%	57%
EBS pollock	1	1	2	1	2	2	2	2	43%	30%
Bogoslof pollock		1		1		1		1		0%
AI pollock		1		1		1		1		0%
EBS Pacific Cod	1	1	1	1	2	2	1	1	*	0%
AI Pacific cod	1	1	1	1	2	2	1	1	*	0%
BSAI Yellowfin sole	1	1	1	1	1	1	1	1	0%	0%
BSAI Alaska Plaice	1		1		1		1		0%	
BSAI Greenlnd turb.		1		1		2		1		0%
BSAI Arrowtooth		1		1		1		1		0%
BSAI Kamchatka		1		1		1		1		0%
BSAI Northrn rock sole		2		1		1		1		0%
BSAI Flathead		1		1		1		1		0%
BSAI Other Flatfish		1		1		1		1		0%
BSAI POP		2		1		1		1		0%
BSAI Blackspotted/RE		3		2		1		2		0%
BSAI Northrn Rockfish	2		1		2		1		0%	
BSAI Shortraker		1		1		1		1		0%
BSAI Other Rockfish		2		1		1		1		0%
BSAI Atka Mackerel	1	1	1	1	1	1	1	1	0%	
BSAI Skates		1		1		1		1		0%
BSAI Sharks		2		2		1		1		0%
BSAI Octopus		1		1		1		1		0%
GOA pollock	2	1	1	1	1	1	1	1	10%	0%
GOA Pacific cod	2	2	2	2	2	1	1	1	*	0%
GOA Nrthrn Rckfish		1		1		1		1		0%
GOA Arrowtooth	1		1		2		1		0%	
GOA Deepwtr Flat	2		1		1		1		0%	
GOA POP	2	2	2	2	1	1	1	1	0%	0%
GOA Northrn Rockfish		1		1		1		1		0%
GOA Dusky Rockfish		2		1		1		1		0%
GOA Rougheyeye/BS	1		1		1		1		0%	
GOA Thornyheads		1		1		1		1		0%
GOA Other Rockfish	1		1		1		1		0%	
GOA Shortraker	1		1		1		1		0%	
GOA Atka Mackerel	1		Unknown		1		1		0%	
GOA Skate	1		1		1		1		0%	
GOA Sharks		2		2		1		1		0%
GOA Octopus	1		1		1		1		0%	

Sablefish assessment

Most of first day devoted to this assessment

- Revisited issues related to apportionment on Friday

Sablefish assessment

New Author



ALASKA SABLEFISH

DAN GOETHEL, DANA HANSELMAN, CARA RODGVELLER, KARI FENSKE, KALEI SHOTWELL, KATY ECHAVE, PAT MALECHA, KEVIN SIWICKE, CHRIS LUNSFORD

MARINE ECOLOGY AND STOCK ASSESSMENT

ALASKA FISHERIES SCIENCE CENTER

JUNEAU, AK

Sablefish

- ESP (partial/updated)
 - Declining YOY growth index
 - below average condition for the age-4 and large female sablefish on the longline survey.
 - Incidental catch of sablefish in the arrowtooth fishery high in last four years
 - Overlap increase
- The Teams noted concern about effort required to produce even a partial update and
 - Commended the ESP team for the efforts
- **The Teams request that the next ESP include socioeconomic analysis of the impacts of the bycatch on various fleets.**
- The Teams also suggest that the ESP developers explore the idea of “hot topics,” similar to the ESR.

Sablefish assessment

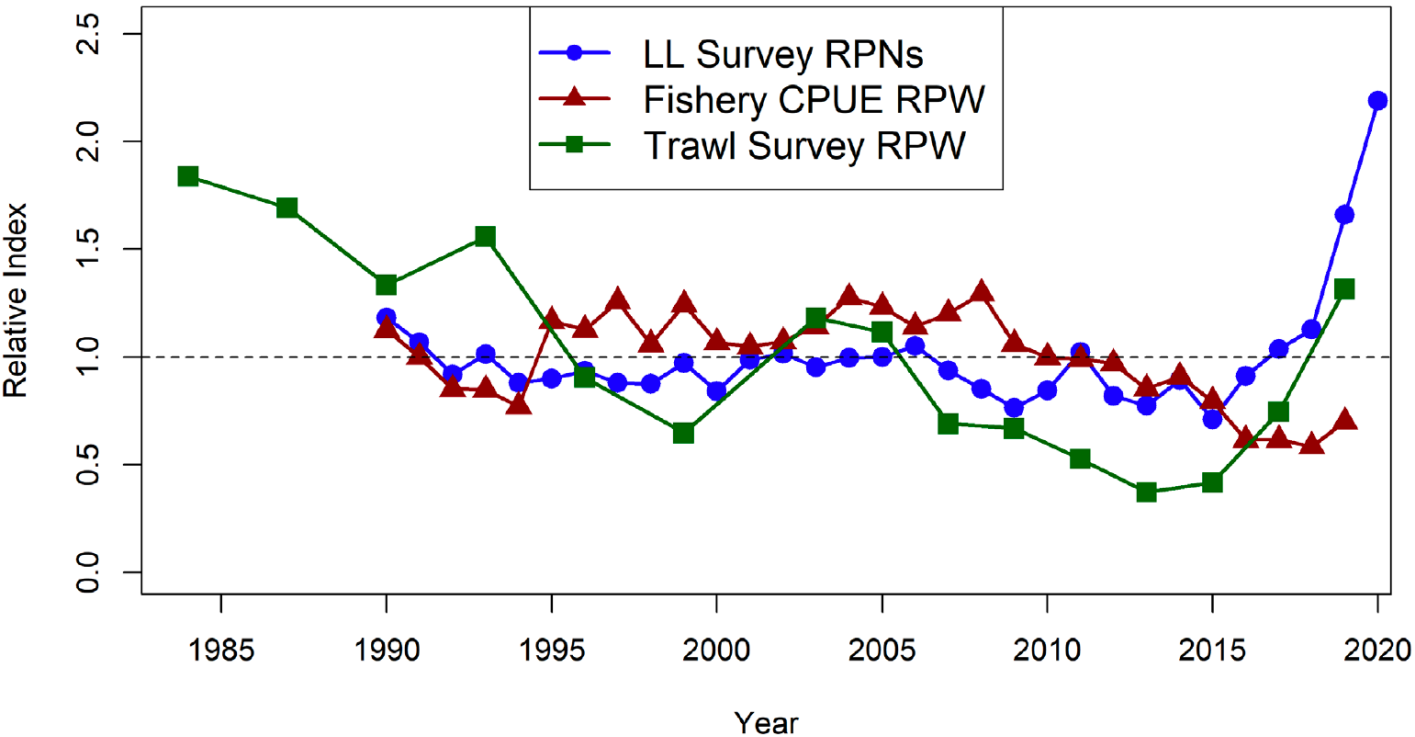
BOTTOM LINE

- Biomass increasing, but not as strongly as projected
- Maximum permissible ABC increasing rapidly, but projections are overly optimistic
- 2021 Author's ABC = 2020 SSC recommended ABC
 - $F_{ABC_2021} (0.0423) = F_{ABC_2020} (0.043) \approx F_{2020} (0.046)$
 - **+17% from author's ABC in 2020, because population is rebuilding**
- Risk table approach utilized as rationale

Year	2020	2021	2022
ABC	22,551	22,551	29,723
ABC _w	22,009	22,237	29,309
OFL	51,726	61,319	71,756
*OFL _w	50,481	60,426	70,710

Sablefish assessment

Model indices



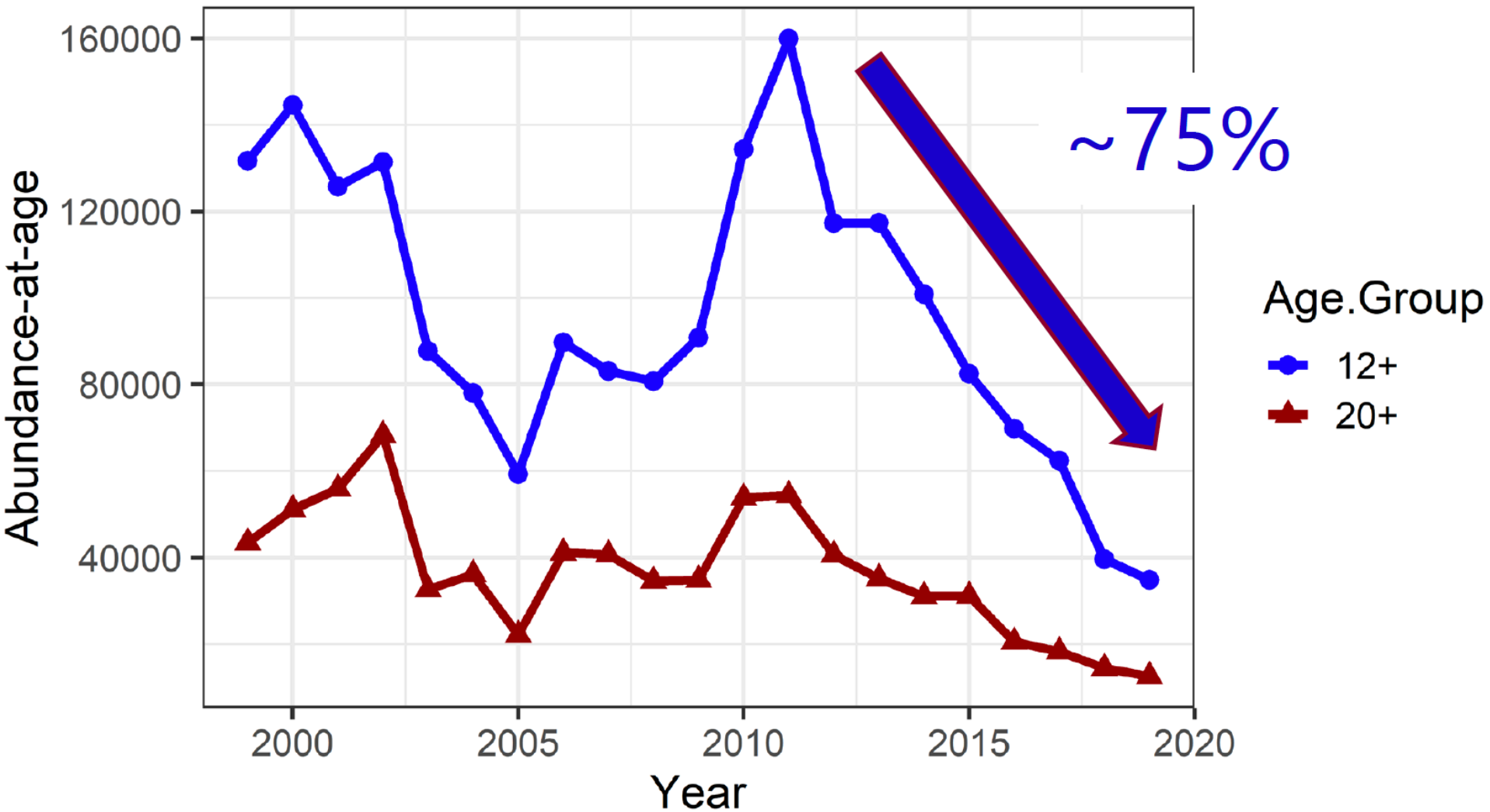
32% Increase

77% Increase

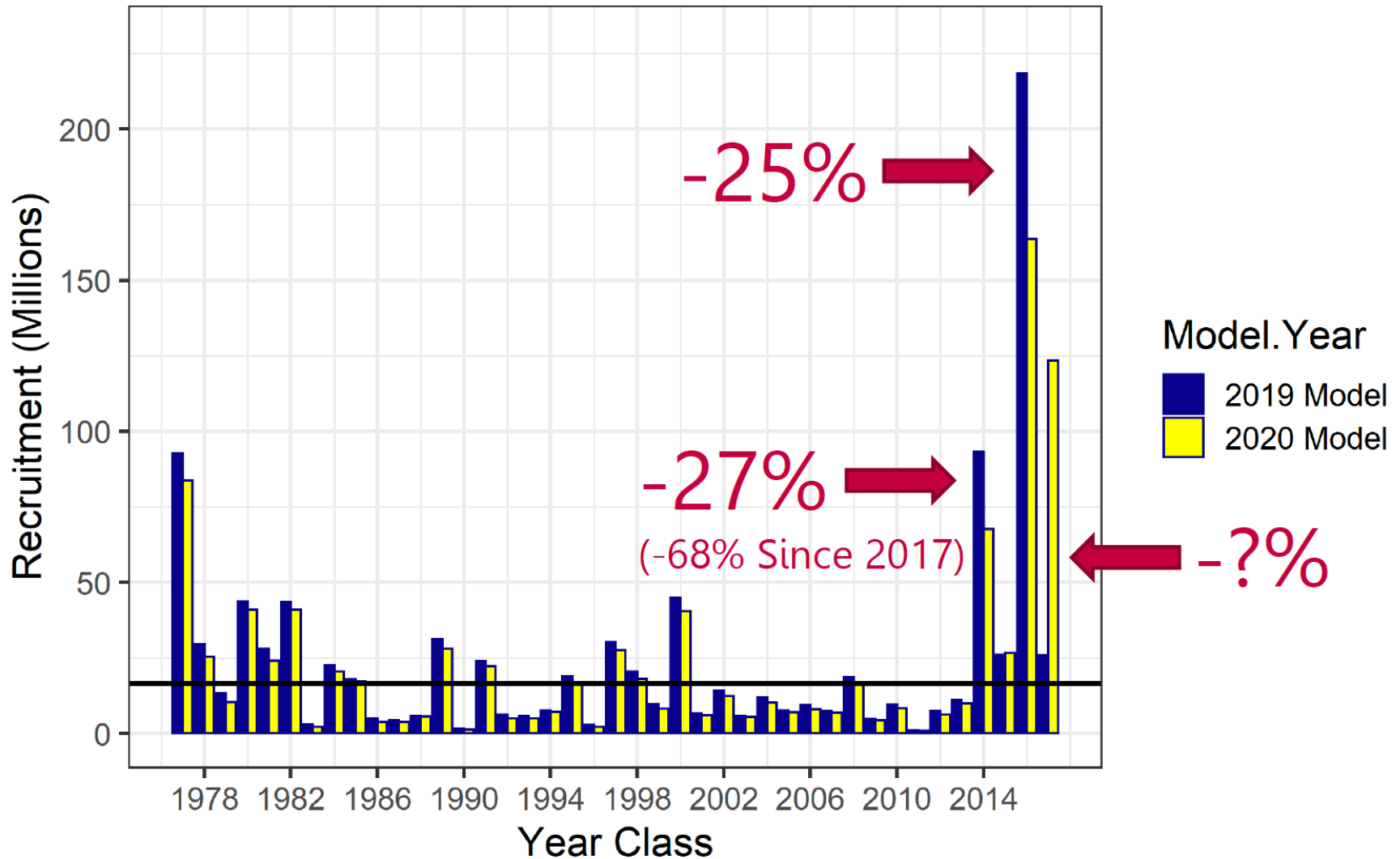
20% Increase

Sablefish assessment

Abundance of older fish on LL survey



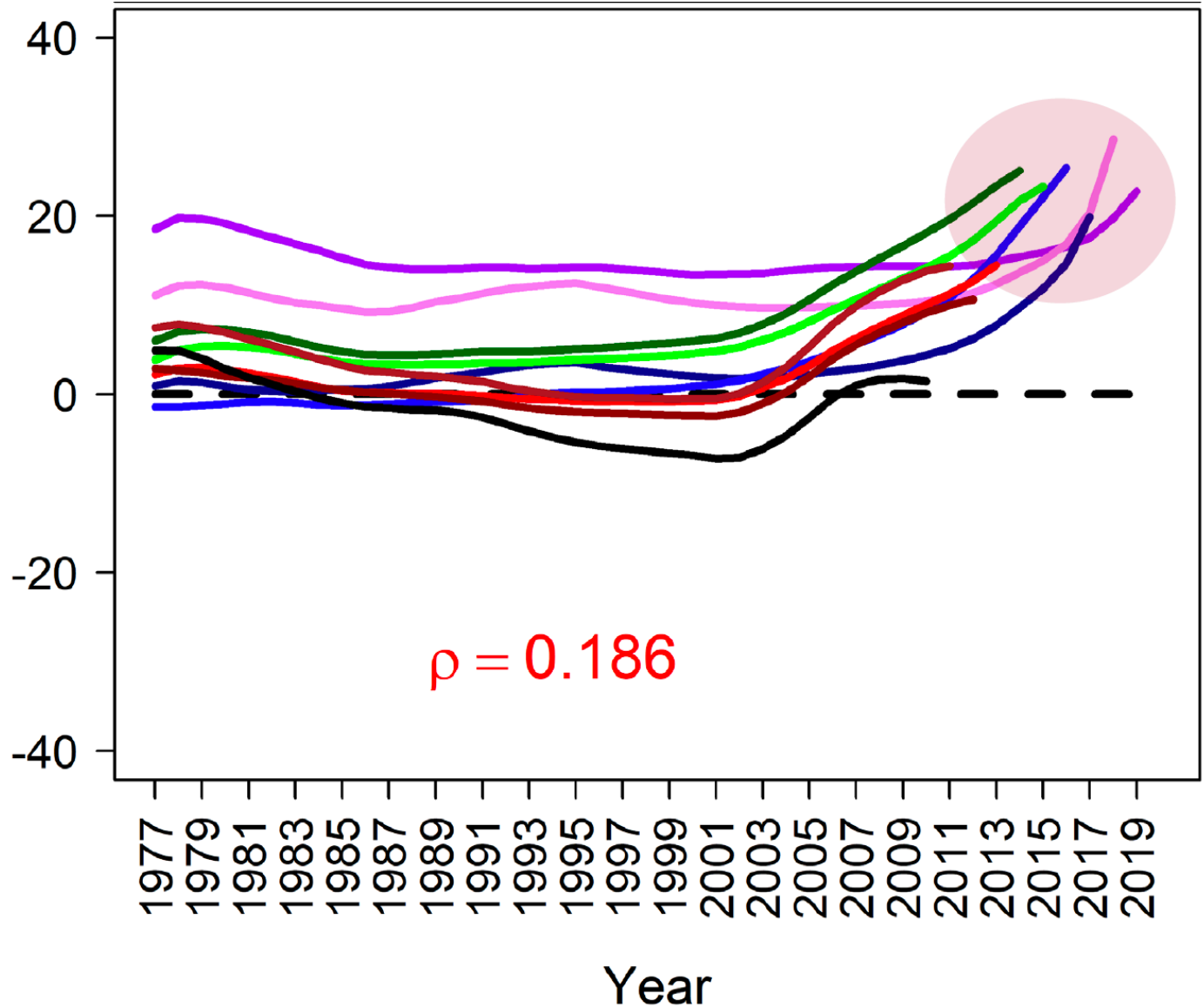
Sablefish assessment



Sablefish assessment

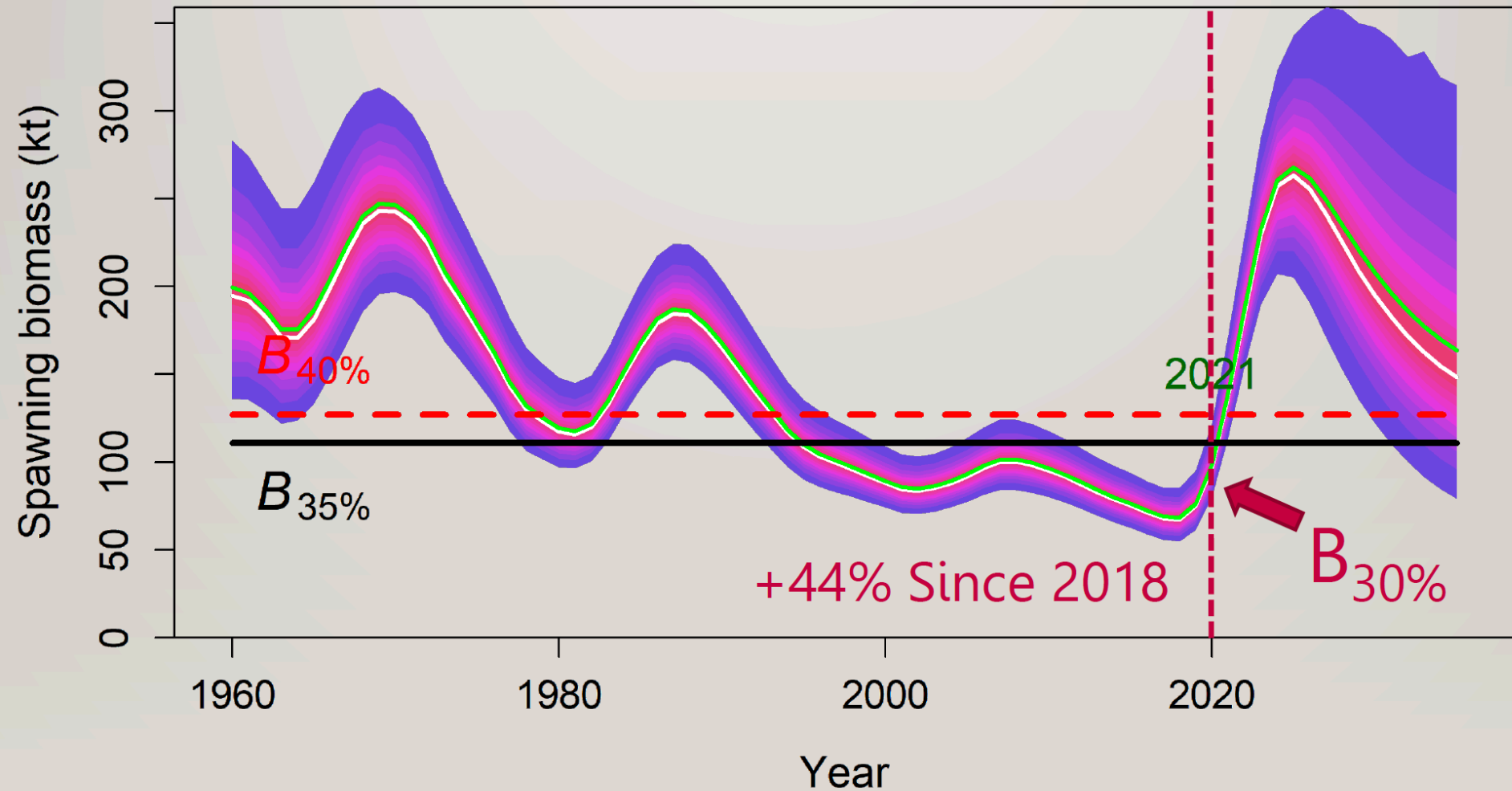
Retrospective

Percent differences
from terminal year

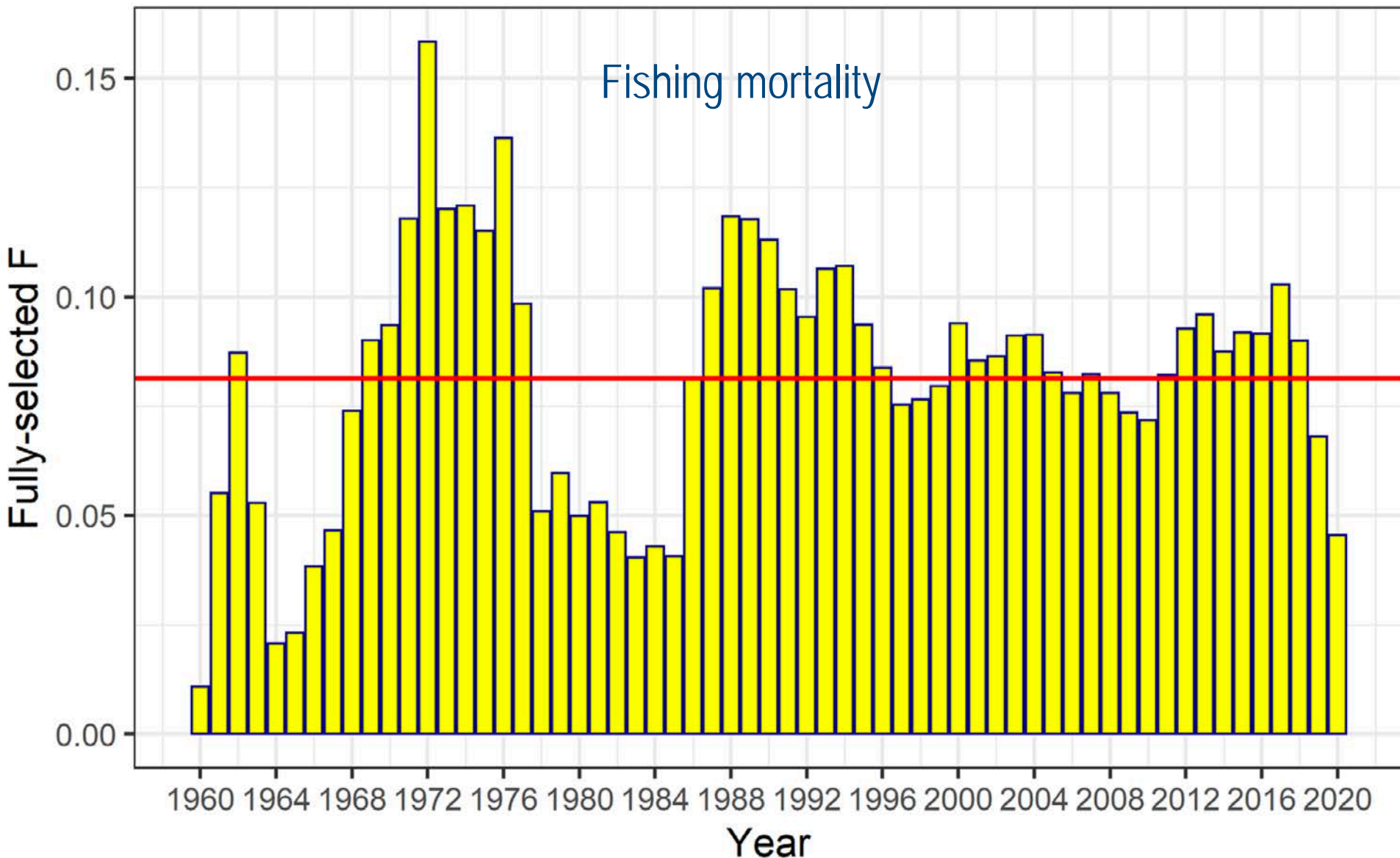


Sablefish assessment

SSB trends



Sablefish assessment



Sablefish assessment

RISK TABLE FRAMEWORK

- Assessment model: **3** (major concern)
- Population dynamics: **3** (major concern)
- Ecosystem: **2** (increased concern)
- Fishery performance: **3** (major concern)
- Reduced ABC would aid in more rapidly rebuilding spawning biomass and improving age structure

Sablefish assessment

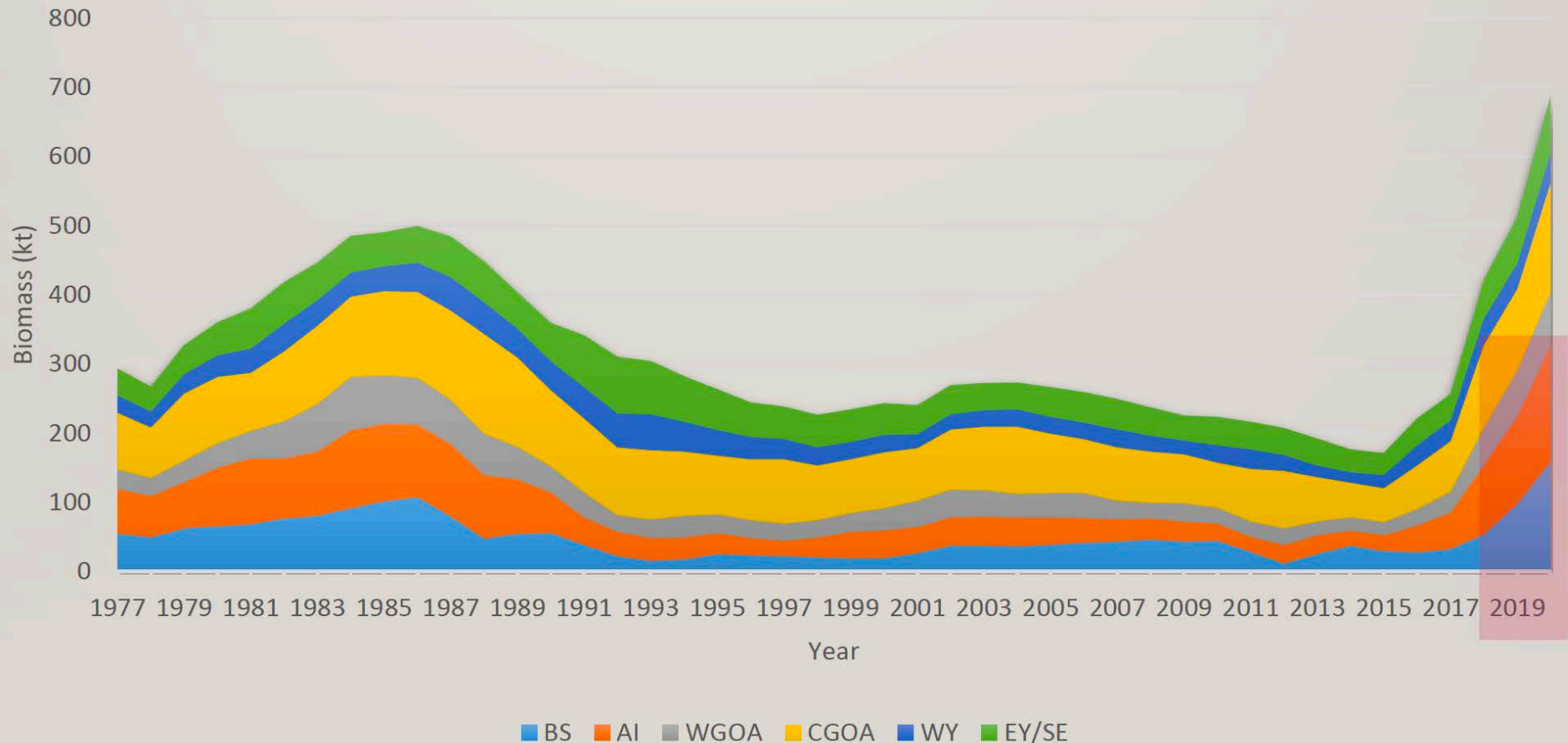
Summary

- Model tension between fitting indices and composition data
- Recent year classes are large, but continue to be downgraded
- SSB increasing rapidly, but still below target rebuilding
- Reference points increased (2016 year class included)
- F decreasing (well below M)
- Retrospective patterns (presently result in overestimation)
- SSB increase from 2019 SAFE to 2020 SAFE was ~10%

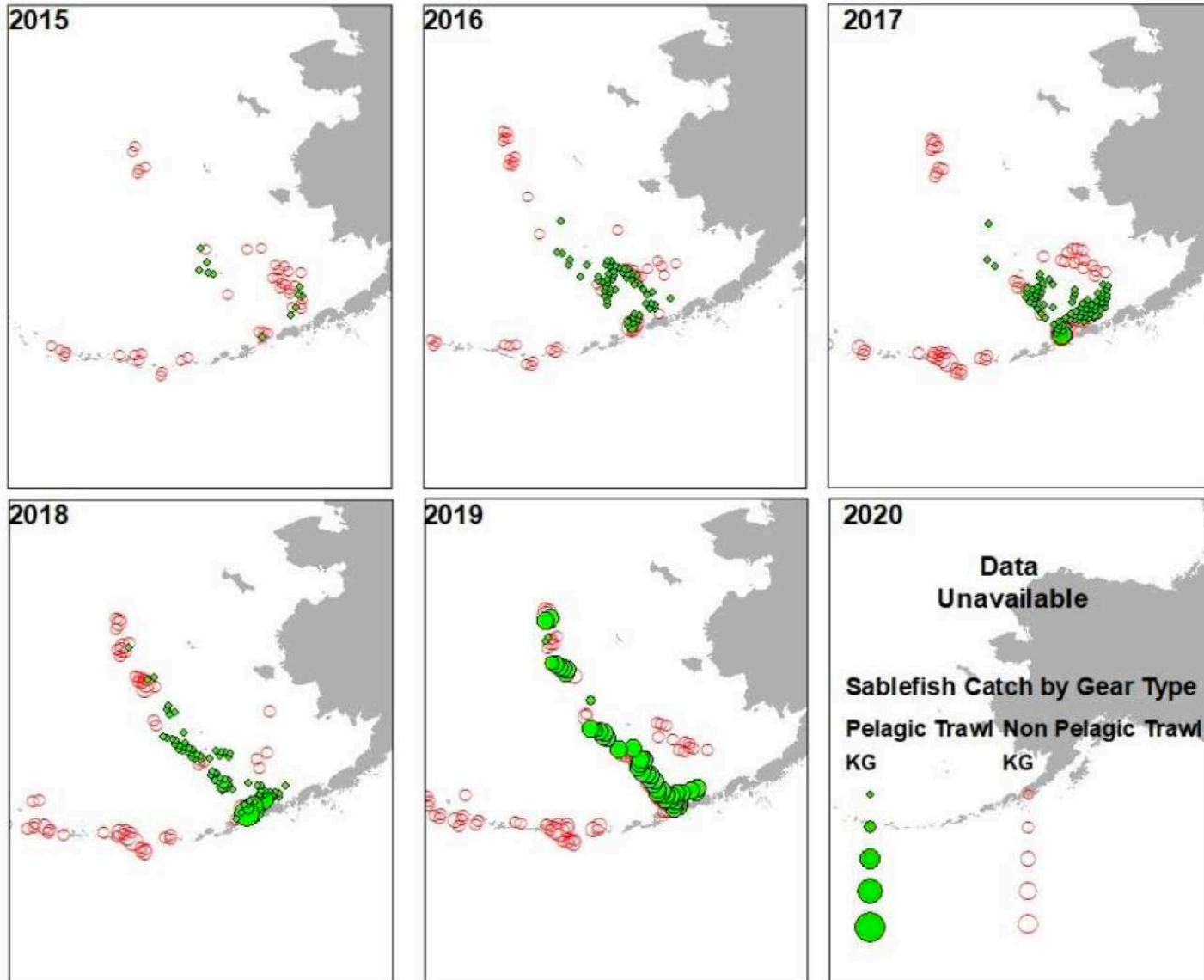
Sablefish assessment

Distribution

Age-2+ Biomass (kt) by Region Partitioned Using Longline Survey Relative Population Weight (RPWs)

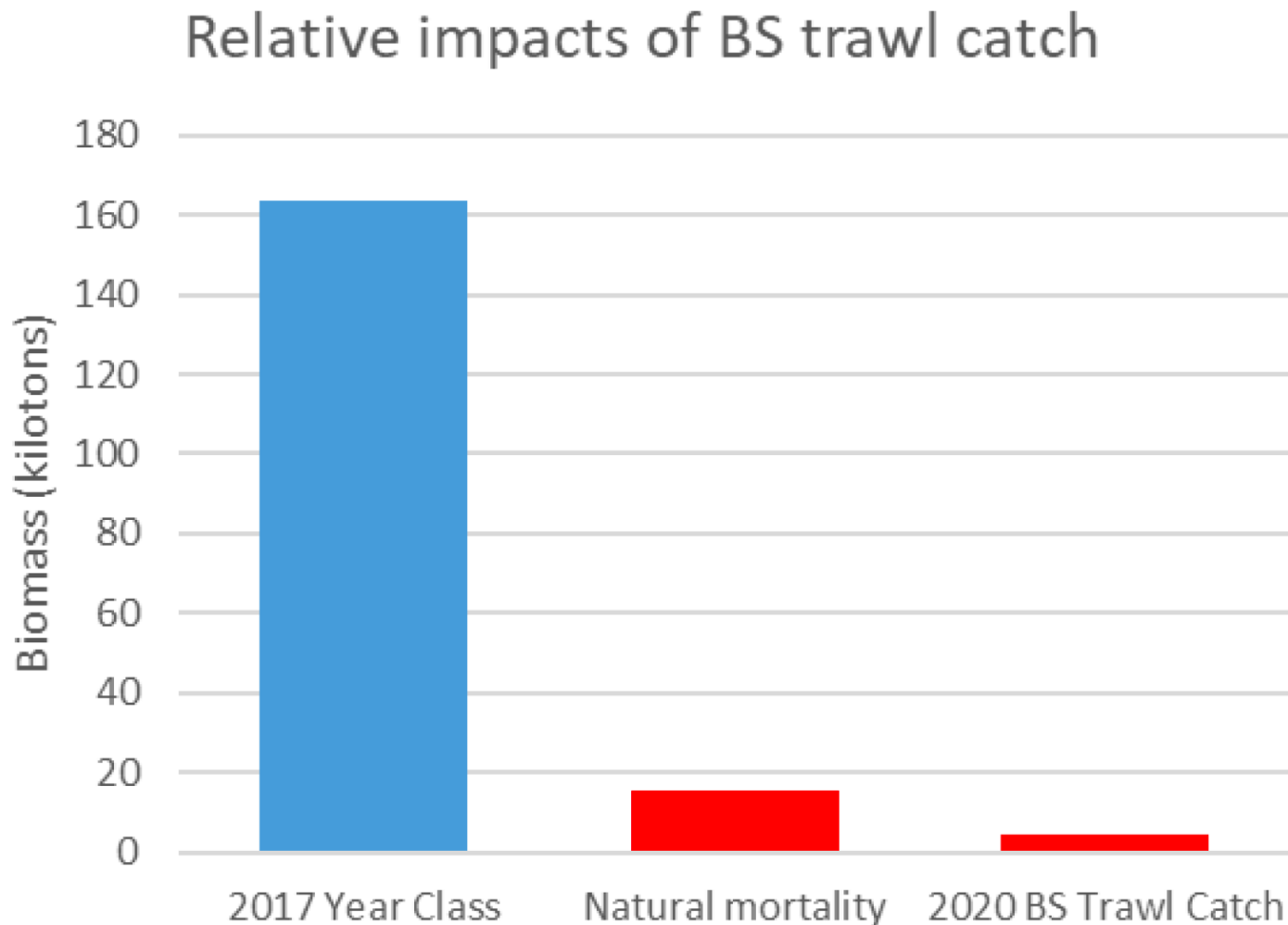


Sablefish bycatch



Sablefish bycatch

Relative biomass estimates



ACLS, AM, APPORTIONMENT, SPATIAL MANAGEMENT POLICY

DIANA STRAM

NPFMC



RECENT ANNUAL CATCH LIMITS (ACLS)

OFL: catch level that corresponds to the stock's maximum sustainable yield

- Catch > OFL = overfishing

For 2020, the **SSC set the OFL statewide to represent the overall area of the stock boundary.**

- No biological reasoning indicating further stock structure separation is needed

ABC: Buffer downward from OFL to account for scientific uncertainty.

- **maxABC prescribed by our GF Tier system control rules**

ACL = ABC (at spatial scale of OFL)

Overall in 2019: Catch > GOA + BSAI ABC (ACL).

Alaska-wide ACL/ABC exceeded by 1,487 t (10% but still ~ 50% of OFL)

2020 Sablefish ACL = Area-wide ABC (BSAI +GOA)

CATCH > TAC ALLOCATIONS 2019-2020

- 2019
 - Primarily in BS non-CDQ trawl (1,764 mt) and CGOA trawl (924 mt)
 - Some in fixed and other trawl:
 - Fixed gear: CGOA (181mt), WYAK (94 mt), SEO (140 mt)
 - Trawl: WGOA (4mt),
- 2020 (as of 11/30/2020)
 - BS non CDQ trawl (3,591 mt)
 - AI non-CDQ trawl (201 mt)
 - CGOA trawl (781 mt)

MANAGEMENT MEASURES TAKEN 2020

- NMFS prohibited retention in:
 - BS non-CDQ trawl gear July 1,2020
 - AI non-CDQ trawl July 14, 2020
 - CGOA trawl (not including Rockfish Program)August 18,2020

ACCOUNTABILITY MEASURES (AM)

- NS1 guidelines: accountability measures (AM) should prevent exceedances of ACLs and correct or mitigate overages of the ACL if they occur.
- BSAI and GOA FMPs reference the following components as AMs
 - Observer coverage
 - Catch accounting
 - In-season management authority
 - Harvest specifications

ACCOUNTABILITY MEASURES (AM)

December 2019: Council noted (clarified in February 2020 as AMs): in response to concerns regarding the ABC (and therefore ACL) overage in both GOA and BSAI (clarified in February 2020 as AMs):

1. TAC in AI set < ABC (normally TAC = ABC)
2. The trawl fleet cautioned to avoid incidental catches of sablefish in 2020 with a scheduled potential action to follow by Council 2020 on sablefish discards
3. The Council acknowledged that the SSC set the OFL statewide to represent the overall area of the stock boundary. As the ACL is assessed at the level of the overall stock (and thus the spatial area over which the OFL is specified) it is highly unlikely than an overage of the overall Areawide ABC (ACL) would occur in 2020.
4. The sablefish stock biomass is increasing and the overage in 2019 is unlikely to represent a conservation concern requiring additional actions by the Council outside of those already taken during the December specifications process.

NPFMC SPATIAL MANAGEMENT POLICY

- 1) As soon as preliminary scientific information indicates that further stock structure separation or other spatial management measures may be considered, the stock assessment authors, plan teams (groundfish, crab, scallop), and SSC should advise the Council of their findings and any associated conservation concerns.
- 2) With input from the agency, the public, and its advisory bodies, the Council (and NMFS) should identify the economic, social, and management implications and potential options for management response to these findings and identify the suite of tools that could be used to achieve conservation and management goals. In the case of crab and scallop management, ADF&G needs to be part of this process.
- 3) To the extent practicable, further refinement of stock structure or other spatial conservation concerns and potential management responses should be discussed through the process described in recommendations 1 and 2 above.
- 4) Based on the best information available provided through this process, the SSC should continue to recommend OFLs and ABCs that prevent overfishing of stocks.

SPATIAL POLICY STEPS 2 AND 3

- Intent of spatial management steps 2 and 3 is to involve more than stock assessment authors in evaluating tools to managing catch-related issues that may be a conservation concern, but information is insufficient to determine to what extent
- Not enough time at PT meetings to necessarily brainstorm tools to address these issues
- Step 2 is intended to bring in additional staff to discussion: NMFS management, economist, stakeholders to address additional tools and implications of application
- How we address step 2 is open-ended

JOINT PLAN TEAM RECOMMENDATIONS

- General discussion of Council led workshop occurred under sablefish with respect to addressing both apportionment and whether or not (or how to evaluate) catch concerns with recent overages of the sub-area ABCs.
 - F rates by area and apportionment range
 - Socio-economic implications including those raised at the June SSC meeting
- Following BSAI BS/RE discussion the concept of a workshop was broadened to include recurring issues with catch exceeding the MSSC annually for BS/RE
 - Noting that this is the only stock for which the spatial management policy has been invoked leading to a workshop in 2016 and codifying the MSSC.
 - Concerns by PT members that this has not been an adequate tool for managing this stock and some consideration should be given to evaluating the efficacy of a spatial management measure invoked in response to the Council's policy and clarify general questions regarding application of the policy

NPFMC SPATIAL MANAGEMENT POLICY

- 1) **As soon as preliminary scientific information indicates that further stock structure separation or other spatial management measures may be considered**, the stock assessment authors, plan teams (groundfish, crab, scallop), and SSC should advise the Council of their findings and any associated conservation concerns.
 - Given lack of stock structure separation leading to single OFL are there spatial catch and conservation concerns?
 - If so, are these related to additional research priorities?
 - Or, are there conservation concerns that the Teams wish to raise to the SSC as it relates to the Spatial Management Policy (Step 1)?

1999 SPECIFICATIONS DECISIONS ON APPORTIONMENT

- **1999 Sablefish Assessment:**
- Assessment authors per requests from industry considered both their status quo apportionment (5 year exponentially weighted survey average) as well as a range of ways (both using fixed and moving averages) to include both survey and fishery data to apportion across BSAI and GOA.
- Assessment then provided the following statement (on the differences between the alternative combined fishery/survey methods considered) while the assessment moved forward with the 5 yr exponentially weighted survey apportionment:

Since sablefish are considered to be one population in Alaska, this analysis implies that it does not matter in what area they're harvested, as long as fishing mortality rates do not greatly differ between areas. Thus as assessment authors, we have no recommendation on which of these three apportionment methods should be used.

JPT/SSC/COUNCIL DECISIONS

- The Joint Plan Team reviewed alternative apportionment methods but continued to recommend the 5 yr exponentially weighted method for apportionment noting concerns with both increased variability with use of fishery data and the introduction of potential bias due to changing fishery catchability and non-random distribution of fishing effort.
- The SSC concurred with the Joint Plan Team.
- The Council in December modified the apportionment in their motion adopting specs to use the weighted (2/3) survey (1/3) fishery data to apportion sablefish (only). They noted that the PT and Council should review this apportionment annually to ensure the health of the stock is not compromised, nor that inappropriate bias is introduced.
- Employed this method until 2013 after which the Teams and SSC recommended the apportionment be frozen pending further analysis
 - Concerns noted with lack of recruitment and lack of good data in western areas where > quotas were being allocated.



Sablefish assessment—apportionment

- Goal to balance **regional biomass** (conservation metric) vs. **stability in area proportions** (economic/stakeholders)
- Fixed apportionment
 - unresponsive to changed biomass distributions
 - Sharp recent increases in biomass in BS (ABC exceeded by >2,000 t)
- ABC closer to biomass distribution may avoid localized depletion
- Important to protect spawning biomass in all areas
 - Minimize mortality on immature fish

Sablefish assessment—apportionment

Area	2020 ABC*	NPFMC 'Standard' Apportionment for 2021 ABC	Fixed Apportionment for 2021 ABC*	<i>Recommended Non-Exp. Survey Apportionment for 2021 ABC</i>	% Difference from 2020 ABC	Stair Step Non-Exp. Survey Apportionment for 2021 ABC	% Difference from 2020 ABC
Total	22,551	22,551	22,551	22,551	0%	22,551	0%
Bering Sea	2,201	4,538	2,201	3,714	69%	2,958	34%
Aleutians	2,976	5,021	2,976	5,324	79%	4,150	39%
Gulf of Alaska	17,374	12,991	17,375	13,513	-22%	15,444	-11%
Western	2,433	2,589	2,433	2,779	14%	2,606	7%
Central	7,692	5,097	7,693	5,786	-25%	6,739	-12%
W. Yakutat**	2,587	1,742	2,588	1,934	-25%	2,261	-13%
E. Yak. / Southeast**	4,662	3,563	4,662	3,014	-35%	3,838	-18%

Sablefish assessment—apportionment

- Tools to account for socioeconomic considerations lacking
 - Better undertaken outside assessment recommendations in the SSC/Council Process Needs to address uncertainty, risk, and socioeconomic considerations
-

Sablefish Joint Team comments

- Commended author on challenges of taking on a complex assessment in a few short COVID-impacted months
- Teams remain concerned about positive retrospective bias and poor fits to indices
- The Teams discussed appropriateness of using fishery CPUE given
 - Changes in the boats switching gear types (trending towards pots)
 - inconsistent trends with fishery-independent indices.
- Teams discussed issues related to shifting reference points
 - Presently based on “average recruitment,” ...incoming year-classes impact magnitude significantly.

Sablefish

The Teams agreed with authors' ABC for 2021

- 17% increase from their 2020 ABC **BUT** a
 - 57% reduction from maxABC
 - Part of rationale was that it was an ABC that aligned closely with if average recruitment had been applied
-
- The Teams reiterated concerns over poor fits and residual patterns in the abundance indices

Sablefish

JPT Recommendations

- Explore spatial distribution of the top four year-classes...
 - If possible, compare them to the spatial distribution of the 1977 year class (from survey and fishery data)
- Examine **bycatch** in the historical foreign pollock fishery to evaluate its impact on the sablefish stock
 - Did a similar pattern occur from large 1977 year-class?
- CPUE work
 - Vessel effects
 - EM
- Biology
 - Age-specific M
 - Maturity

Sablefish apportionment

Team discussion

The Teams preferred to move away from the current fixed apportionment (same since 2014)

- Noted that proportions closer to relative fish distribution designed to mitigate stock-structure uncertainty and balance exploitation rates
- Agreed with recommendation: 5-year moving average of survey biomass
- SSC, AP, or Council to weigh in on selecting an alternative
- Studies noted due to movement, alternative apportionments biologically acceptable (within range)

Sablefish apportionment (5-year mean, recommended)

Whale depredation corrections, 5-year mean survey biomass (Non-exponential...)

Region	2020			2021		2022	
	OFL _w	ABC _w	TAC	OFL _w	ABC _w	OFL _w	ABC _w
BS	--	2,174	1,861	--	3,674	--	4,843
AI	--	2,952	2,039	--	5,294	--	6,978
BSAI	--	5,126	3,900	--	8,968	--	11,821
GOA¹	-	16,883	14,393	--	13,269	--	17,489
Alaska-wide	50,481	22,009	18,293	60,426	22,237	70,710	29,309

Sablefish apportionment

Whale depredation corrections, fixed apportionment (constant since 2014)

Region	2020			2021		2022	
	OFL _w	ABC _w	TAC	OFL _w	ABC _w	OFL _w	ABC _w
BS	--	2,174	1,861	--	2,177	--	2,869
AI	--	2,952	2,039	--	2,959	--	3,901
BSAI	--	5,126	3,900	--	5,136	--	6,770
GOA¹	--	16,883	14,393	--	17,087	--	22,520
Alaska-wide	50,481	22,009	18,293	60,426	22,223	70,710	29,290

Note total changes slightly due to differential whale depredation rates by region

Also, some rounding issues

Sablefish

- In 2019 minutes of JPT:
 - Considerable uncertainty exists as to whether this is a biological concern or allocation issue, and the Teams suggested following the Council's spatial management policy to resolve this issue

Sablefish apportionment

Team discussion

Notion of a workshop as next step

- Teams noted issues related to apportionment and that it triggers “step 1” of Council’s spatial management policy
- Hence recommended that the SSC and Council consider developing a Council workshop in 2021 to evaluate both the fishing mortality rates by gear associated with different apportionment methods including management and socio-economic considerations
- This workshop would satisfy step 2 of the policy, which is to “identify the economic, social, and management implications and potential options for management response”.

Sablefish apportionment

Team discussion

Potential workshop focus questions (relative to implementing the Spatial Management Policy)

- 1) What are the criteria for assessing whether a spatial management tool has been effective?
- 2) What are the specific criteria for when the Policy should be applied (either for the first time for a stock, or follow-up applications)?
- 3) Are there criteria for balancing conservation concerns (i.e., stock biomass and productivity) vs socio-economic concerns, and do these vary between target and bycatch stocks?